

# MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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## INTRODUCTION.

The MONTHLY WEATHER REVIEW for January, 1901, is based on reports from about 3,100 stations furnished by employees and voluntary observers, classified as follows: regular stations of the Weather Bureau, 159; West Indian service stations, 13; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Railway Company, 96; Canadian Meteorological Service, 32; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Mr. Maxwell Hall, Government Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Commander Chapman C. Todd, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Insti-

tute, San Jose, Costa Rica; Captain François S. Chaves, Director of the Meteorological Observatory, Ponta Delgada, St. Michaels, Azores, and W. M. Shaw, Esq., Secretary, Meteorological Office, London.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the Review, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is  $157^{\circ} 30'$  or  $10^{\text{h}} 30^{\text{m}}$  west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now always reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

## FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

On January 7, 1901, daily forecasts of the direction and force of the wind for the transatlantic steamer tracks west of the fortieth meridian were regularly begun. These forecasts cover the first three days of the passage of steamers eastward bound from United States ports. When the conditions presented by Atlantic and western European reports will permit, forecasts of severe storms in the transatlantic track will be issued for the benefit of vessels about to leave European ports. Forecasts will also be issued in connection with American storms of marked severity when their course to European waters can be calculated.

The storms of January, 1901, were unusually severe over the north Atlantic ocean. During the first ten days of January the barometer was abnormally high over north-central and west-central Europe, and abnormally low over the Mediterranean. This distribution of pressure was attended by exceptionally low temperature over southern Europe and temperature above the seasonal average over northern Europe. During the same period the barometric pressure was unusually low, and severe gales continued over the middle Atlantic ocean, while over the western part of the Atlantic fair weather prevailed. During the second decade of the month heavy gales continued over mid ocean; on the 12th, 16th, and 17th, the pressure was very low over the British Isles; during

this period several severe storms advanced eastward from the American Continent. From the 20th to the close of the month severe storms occurred over the eastern and western portions of the north Atlantic, while over mid ocean the barometer continued generally high. The conditions which prevailed, and the severe gales which occurred over the western Atlantic, were accurately covered by the special daily forecasts of the Weather Bureau.

Severe gales prevailed along and off the Pacific coast of the United States during the first half of month. Due warning was given of the occurrence of these gales by the Weather Bureau offices at San Francisco, Cal., and Portland, Oreg.

During the stormy period of the first half of the month in the Pacific coast States unusually heavy falls of snow delayed trains and interrupted telegraphic communication. In parts of central and southern California the snowfalls of the month were the heaviest in years.

Moderate temperatures for the season prevailed generally east of the Pacific coast States. On the 2d killing frost occurred in central California, and at San Luis Obispo the minimum temperature,  $24^{\circ}$ , was the lowest on record at that place. On the 9th frost occurred generally throughout southern California. On the 18th special warnings of continued low temperature and strong north winds, with snow in the mountain